

# SEQUENCE LISTING

<110> Yunn-Bor Yang  
Chia-Li Wei  
Jyh-Shing Hsu  
Ying-Chieh Tsai

<120> Mutated Penicillin Expandase and Process for Preparing 7-ADCA Using the Same

<130> 6653-017-999

<140> To Be Assigned

<141> 2002-03-26

<160> 1

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1230

<212> DNA

<213> Streptomyces clavuligerus

<220>

<221> CDS

<222> (232)...(1164)

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gcggacgcgc	tggacgcgct	gacgggcgag	tgatcccccc	ggctcgcgga	ccgcctcccc	180
cgcgctgttg	accaccgggt	tcacggatta	cgagaggatc	agtgagagtt	g atg gac	237
					Met Asp	
					1	
acg acg gtg	ccc acc ttc	agc ctg gcc	gaa ctc cag	cag ggc ctg	cac	285
Thr Thr Val	Pro Thr Phe	Ser Leu Ala	Glu Leu Gln	Gln Gly Leu	His	
5		10		15		
cag gac gag	ttc cgc agg	tgt ctg agg	gac aag ggc	ctc ttc tat	ctg	333
Gln Asp Glu	Phe Arg Arg	Cys Leu Arg	Asp Lys Gly	Leu Phe Tyr	Leu	
20		25		30		
acg gac tgc	ggt ctg acc	gac acc gag	ctg aag tcg	gcc aag gac	atc	381
Thr Asp Cys	Gly Leu Thr	Asp Thr Glu	Leu Lys Ser	Ala Lys Asp	Ile	
35		40		45	50	
gtc atc gac	ttc ttc gag	cac ggc agc	gag gcg gag	aag cgc gcc	gtc	429
Val Ile Asp	Phe Phe Glu	His Gly Ser	Glu Ala Glu	Lys Arg Ala	Val	
	55		60		65	
acc tcg ccc	gtc ccc acc	atg cgc cgc	ggc ttc acc	ggg ctg gag	tcg	477
Thr Ser Pro	Val Pro Thr	Met Arg Arg	Gly Phe Thr	Gly Leu Glu	Ser	
	70		75		80	
gag agc acc	gcc cag atc	acc aat acc	ggc agc tac	tcc gac tac	tcg	525
Glu Ser Thr	Ala Gln Ile	Thr Asn Thr	Gly Ser Tyr	Ser Asp Tyr	Ser	
	85		90		95	

atg tgc tac tcg atg ggc acc gcg gac aac ctc ttc ccg tcc ggt gac Met Cys Tyr Ser Met Gly Thr Ala Asp Asn Leu Phe Pro Ser Gly Asp 100 105 110	573
ttc gag cgg atc tgg acc cag tac ttc gac cgc cag tac acc gcc tcc Phe Glu Arg Ile Trp Thr Gln Tyr Phe Asp Arg Gln Tyr Thr Ala Ser 115 120 125 130	621
cgc gcg gtc gcc cgg gag gtc ctg ccg gcg acc ggg acc gag ccc gac Arg Ala Val Ala Arg Glu Val Leu Arg Ala Thr Gly Thr Glu Pro Asp 135 140 145	669
ggc ggg gtc gag gcc ttc ctc gac tgc gag ccg ctg ctg cgg ttc cgc Gly Gly Val Glu Ala Phe Leu Asp Cys Glu Pro Leu Leu Arg Phe Arg 150 155 160	717
tac ttc ccg cag gtc ccc gag cac cgc agc gcc gag gag cag ccc ctg Tyr Phe Pro Gln Val Pro Glu His Arg Ser Ala Glu Glu Gln Pro Leu 165 170 175	765
cgg atg gcg ccg cac tac gac ctg tcg atg gtc acc ctc atc cag cag Arg Met Ala Pro His Tyr Asp Leu Ser Met Val Thr Leu Ile Gln Gln 180 185 190	813
aca ccc tgc gcc aac ggc ttc gtc agc ctc cag gcc gag gtc ggc ggc Thr Pro Cys Ala Asn Gly Phe Val Ser Leu Gln Ala Glu Val Gly Gly 195 200 205 210	861
gcg ttc acg gac ctg ccc tac cgt ccg gac gcc gtc ctc gtc ttc tgc Ala Phe Thr Asp Leu Pro Tyr Arg Pro Asp Ala Val Leu Val Phe Cys 215 220 225	909
ggc gcc atc gcg acc ctg gtg acc ggc ggc cag gtc aag gcc ccc cgg Gly Ala Ile Ala Thr Leu Val Thr Gly Gly Gln Val Lys Ala Pro Arg 230 235 240	957
cac cat gtc gcg gcc ccc cgc agg gac cag ata gcg ggc agc agc cgc His His Val Ala Ala Pro Arg Arg Asp Gln Ile Ala Gly Ser Ser Arg 245 250 255	1005
acc tcc agt gtg ttc ttc ctc cgt ccc aac gcg gac ttc acc ttc tcc Thr Ser Ser Val Phe Phe Leu Arg Pro Asn Ala Asp Phe Thr Phe Ser 260 265 270	1053
gtc ccg ctg gcg cgc gag tgc ggc ttc gat gtc agc ctg gac ggc gag Val Pro Leu Ala Arg Glu Cys Gly Phe Asp Val Ser Leu Asp Gly Glu 275 280 285 290	1101
acc gcc acg ttc cag gat tgg atc ggg ggc aac tac gtg aac atc cgc Thr Ala Thr Phe Gln Asp Trp Ile Gly Gly Asn Tyr Val Asn Ile Arg 295 300 305	1149
cgc aca tcc aag gca tagagagcac acaccgtcat ggtcacagca gcaatcagtg Arg Thr Ser Lys Ala 310	1204
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